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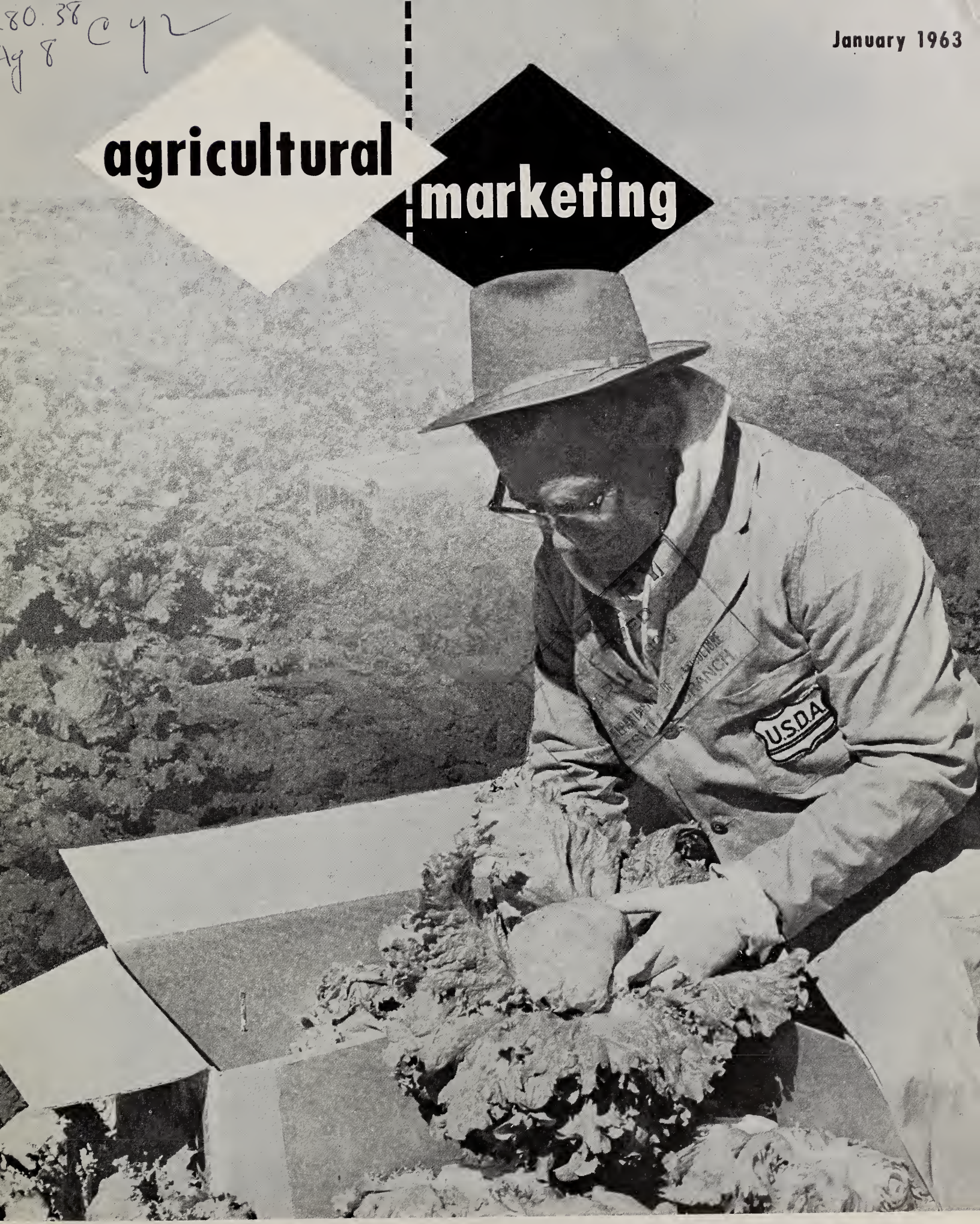

U. S. DEPARTMENT OF AGRICULTURE • AGRICULTURAL MARKETING SERVICE

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ORVILLE L. FREEMAN
Secretary of Agriculture

S. R. SMITH, Administrator,
Agricultural Marketing Service

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Cover page

This cover photo shows a USDA Agricultural Marketing Service grader performing one of the many services provided by AMS to help keep down marketing charges, which cover the cost of assembling, shipping, packaging, storing, processing and selling. The setting in this instance is a lettuce field. But chances are that, at the same time, other AMS workers were just as busy in such varied settings as food processing plants, tobacco and cotton markets, stockyards, and even civil defense meetings planning for the job of managing food supplies in the event of national emergency. Such services help maintain an efficient and economical private marketing system that preserves America's heritage of fair competition and free enterprise. See story on page 13.

Editor, MILTON HOFFMAN

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Infrared heaters (nonchemical) may

Protect Stored Grain From Insect Damage

By Elvin W. Tilton and Harry W. Schroeder

INFRARED heaters may become a nonchemical tool for protecting stored grain. This type of quick-heating has been popular in modern kitchen ovens; and now marketing research workers of USDA's Agricultural Marketing Service are trying to adapt it for insect control.

Infrared heating is already being used for drying rice. If this process can be modified, grain going into storage would be free of insects after exposure to infrared heat. Less effort would then be necessary to protect the grain from reinfestation during storage. AMS tests so far have been limited to rice, but may be applied to other grain later.

An infrared oven can be easily regulated to meet most any cooking need. But the same flexibility of control in killing stored-grain insects with infrared heaters has not yet been perfected.

However, substantial progress has been made in bringing the infrared method of killing insects closer to practical commercial use. The former high cost of operation has been reduced by developing units that use gas jets instead of electricity to heat a shielded ceramic panel, which radiates infrared heat. And recent tests have given marketing researchers tighter rein over the performance of the units.

Close control of the process is essential because the gas-fired units can heat bulk lots of grain even faster than food in an infrared oven.

Marketing researchers have heated rice, for instance, to 117° F. in only 5 seconds, and as high as 154° F. in 15 seconds. But the units did a better job of killing rice weevils and protecting the quality of the rice when the rice was heated more slowly—in about 45 seconds.

When the rice was heated faster, such as in five seconds with the heater as close as six inches to the rice, many of the insects hidden inside the rice kernels were not killed because of the lower final temperatures of the grain.

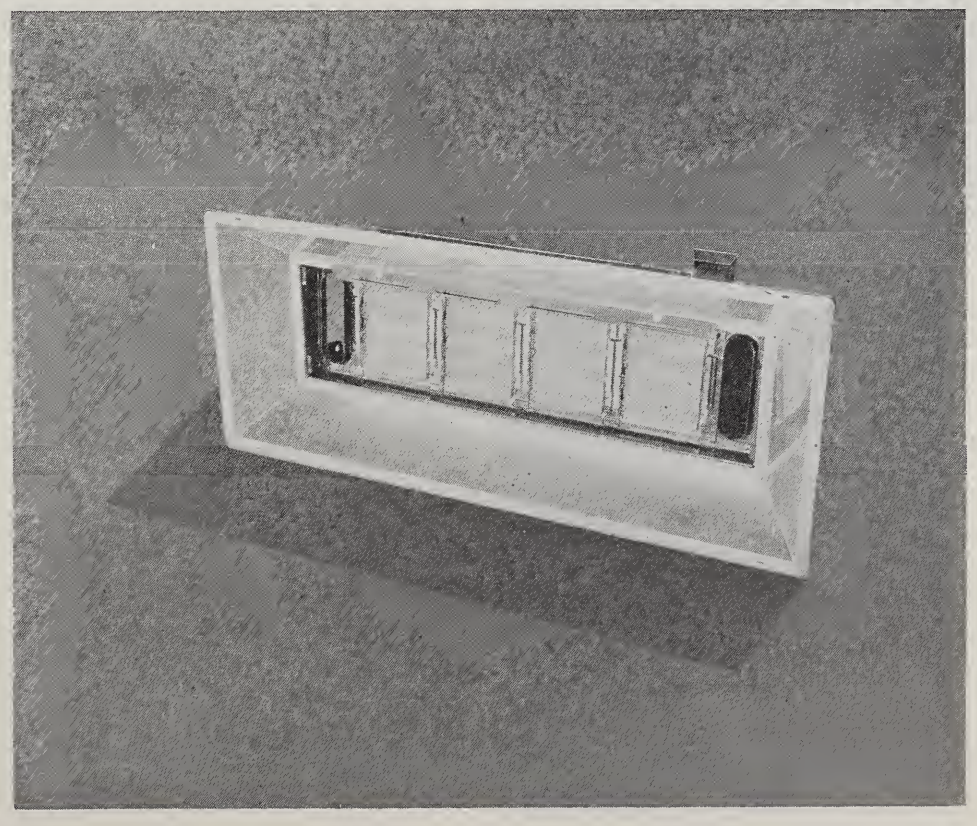
Infrared heater settings that approach the danger limit for quality of rice were needed to gain complete control over the lesser grain borer and the Angoumois grain moth. Examples of damage to the quality of rice are failure to germinate properly, if at all, and changes in the taste of rice when cooked.

Marketing researchers are exploring ways of overcoming this problem. One possible solution that will be tested is to agitate the grain as it's heated.

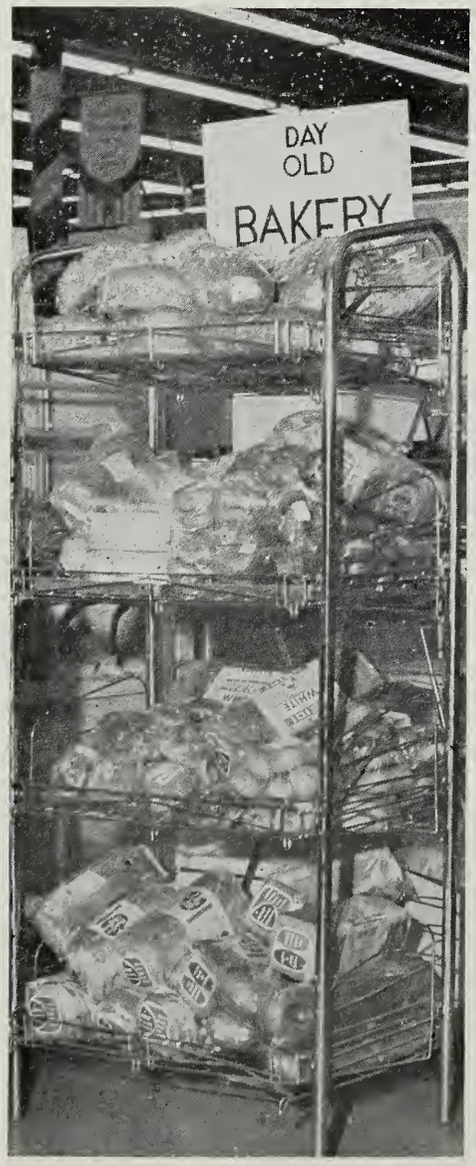
Additional tests are also underway to learn how effective infrared heaters are on insects at various stages of their life cycles.

Single free copies of a report of earlier tests may be obtained by sending for AMS-445, "Infrared Radiation for the Control of Immature Insects in Kernels of Rough Rice." Address requests to Marketing Information Division, AMS, USDA, Washington 25, D.C.

(The authors are members of AMS' Market Quality Research laboratories in Houston and College Station, Texas, respectively.)



Stale Bakery Products Are Expensive



By GEORGE A. KISACKY

CUSTOMERS shopping in retail grocery stores will often see bakery products displayed with a sign reading, "Day Old Bakery Products at Reduced Prices." Why are these displays and signs necessary?

Marketing research workers in the USDA's Agricultural Marketing Service looked at the amount spent by consumers for baked goods in retail grocery markets—about $2.7 billion in 1961—and decided that finding the answer could mean lower prices for consumers, or more income for producers including the farmers who grow the raw materials that go into bakery products.

Employees of the Wholesaling and Retailing Research Branch of AMS studied the self-service and service bakery departments of independent and chain grocery markets and compiled facts on the quantities of and reasons for stale bakery products.

Studies in nine retail store bakery departments show that stale products varied from 2 percent to 25 percent of total bakery products sold, with the average about 10 percent of sales. About 50 percent of this loss was recovered by selling the stale products at reduced prices; however, this does not include costs of rehandling, repricing, or repackaging.

These losses occur when bakery products are not sold within their specified shelf life. The shelf life can be from one day to as much as twelve days, depending on the product. Most companies stamp each product with a symbol designating the day it was baked or date it should be removed from the display and disposed of as stale. These symbols may be a date, letter, number, lines, or dots of different colors, or a different colored tape used each day to close wrappers.

There were many reasons for the large number of stale products in these markets. One of the principal reasons was overordering by store personnel. This occurred when ordering was done without regard to the number of products ordered the previous week, and the number sold or left over on the display counters each day. To improve their ordering methods and reduce the number of stale products, store personnel should:

(1) Keep a daily record of products ordered, sold and left over, and any pertinent information on the reasons for their lack of movement. This record should be referred to when making the bakery order.

(2) Check previous year's records for special occasions and holiday sales to determine the amount to order. This would also apply for the week prior to or the week after these occasions.

(3) Check with other departments for special sales that would "tie-in" with or compete with sales of bakery products. For example, a ground meat sale in the meat department would necessitate ordering more hamburger buns and fewer hot dog buns, or a frozen pie sale in the frozen foods department would result in ordering fewer fresh pies.

(4) Keep data on related factors which may affect store sales, such as pay periods of the workers in the area, or expected weather.

Other factors contributing to excessive stale bakery products were: Products damaged or crushed in shipment, store handling or customer handling; late deliveries where inadequate selling time remained to move the order; inadequate servicing of displays with empty, or near empty, shelves during part of the selling period; and oversupplies of an item due to an illegibly written order or mistake by the order filler.

Sometimes stale products resulted when the central bakeries distributed more products to the stores than were ordered. This was done when a bakery produced more than ordered on an item in order to get a full batch, or when central office personnel increased an order they felt was too low.

Independent bakery driver salesmen also contributed to excessive stale products in some stores. Competition for shelf space caused some drivers to overload the shelves to insure keeping their allotted space. This was especially true when the drivers were given full credit for stale products returned to the bakery; however, baked products supplied by independent bakery drivers had the lowest average percentage of stale products in the bakery department because many stores limited the amount of space to a point where these products sold out most days.

Stale bakery products have a direct bearing on display space used, labor, sales and profits in grocery stores. Extra sales space is required to display them both on the shelf and on special discount displays, and extra handling labor is required.

This research by the Agricultural Marketing Service is part of a larger project to reduce marketing costs for bakery products, thus aiding consumers and suppliers.

(*The author is a staff member, Transportation and Research Division, Agricultural Marketing Service.*)

A New Carton-Forming Device

Citrus packinghouses in Florida alone could save over $90,000 a year with this AMS tool

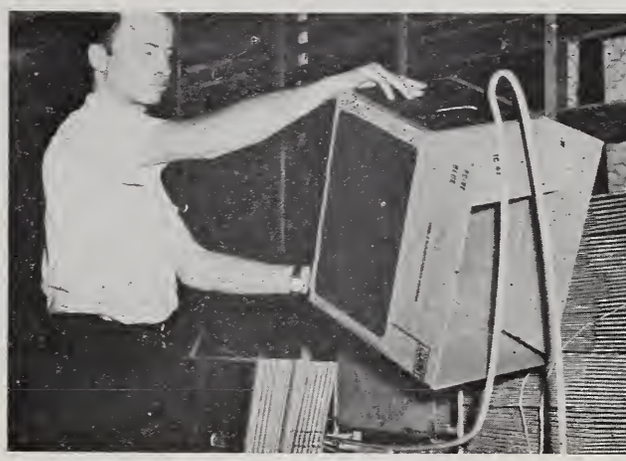
CITRUS packinghouses can save from $118 to $466, annually, per 100,000 cartons of citrus, by using a new carton-forming device developed by William G. Grizzell, marketing researcher in USDA's Agricultural Marketing Service in cooperation with the Florida Agricultural Experiment Station. If the carton-forming device were used in just one State—Florida—the industry there would save over $90,000 in a single season, since about a third of the fresh citrus shipments in that State are made in the kind of container with which the AMS device can be used. Savings would be even greater if the device were applied in all citrus-producing States. This is one of the many kinds of improvements in moving agricultural products through marketing channels which help keep consumers' food costs from rising.

Savings come from reduced labor requirements for forming and assembling two-piece, full-telescoping fiberboard cartons. From a third to two-thirds less labor is required when the new device is employed. It was developed for use with ⅘-bushel size cartons used as shipping containers for citrus, but it can also be applied with equal advantage in packinghouses handling apples, peaches, tomatoes, or other commodities shipped in the same type of container.

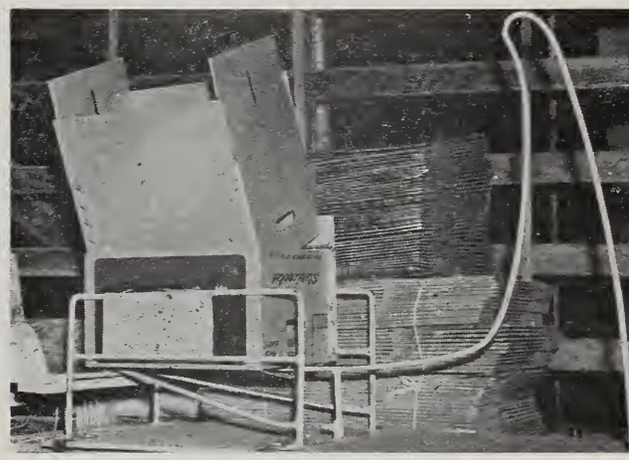
The USDA carton-forming device is made of ½-inch round steel. Rods that are part of the device are shaped to fold the flaps of the outer piece of the carton and to hold the carton during assembly. A metal guide is attached to one side of the device to aid the insertion of the inner piece of the carton into the outer, on a shoe-horn principle.

The new device was tested in Florida packinghouses, where equipment presently used to form cartons consists of either short work tables or wood jigs that are designed to hold the inner piece of the carton during assembly. The AMS device was developed to meet the need for a better method of forming cartons to keep pace with automatic filling machines. One worker using the AMS device was developed to meet the place cartons in a chute at the rate of 488 per hour. A worker using older methods can handle only about 136 to 288 cartons per hour.

The cost of constructing and installing the device is estimated at $22, including about $4 for parts. It has an estimated useful life of five years. Further details on construction, labor requirements, and costs may be obtained by sending for AMS-490 "A Device for Forming Two-Piece Telescoping Cartons." Address requests to the Marketing Information Division, AMS, USDA.



To assemble a carton with the device, the outer piece is picked up, opened, and shoved against the curved section of the device to fold the two end flaps. As the worker moves the carton foward into the device, the two side flaps are then folded by the two bottom rods.



The inner part of the carton is picked up, formed, and inserted into the outer part with the aid of a guide attached to one side of the device. The assembled carton is then shoved directly into the gravity chute for delivery to packers.

A closeup view of the side-flap folding rods and the extension of the end-flap folding rod into the body of the device.

A Pakistan School U. S. Wheat Helped to Build

CEREMONIES in Washington and Pakistan last October marked completion of a school which U.S. wheat has helped to build for Pakistani children.

While the school was being dedicated in Gangu Bahadur village, Pakistan, there was similar observance of its completion at a U.S. Department of Agriculture ceremony in which Secretary of Agriculture Orville L. Freeman said to His Excellency Aziz Ahmed, Ambassador of Pakistan: "May this be only one of many schools built because our two countries who share common goals also are learning to share common resources to the benefit of the free world."

The building of the school, initiated by Secretary Freeman, has shown how U.S. Food for Peace wheat can help provide educational facilities in developing countries.

The Secretary toured the Village of Gangu Bahadur, a village near the historic Khyber Pass. He was so impressed that he asked Malik Mohammed Shaffi (Chairman of the Village Council) what the village needed most and he was told a school. The Secretary then told the Chairman that if American wheat could help build that school he would try to make the wheat available. That conversation a year ago started a chain of events which resulted in the fine new school of today.

The project was turned over to Wheat Associates, Inc., a major cooperator with the Foreign Agricultural Service in foreign market development.

Chairman Shaffi, Pakistani cooperator, and Ivan Packard, Pakistan country director of Wheat Associates—U.S.A. Inc., with headquarters in Karachi, Pakistan, gave leadership to the project. The governments of Pakistan and the United States cooperated wholeheartedly.

Approximately 1,000 bushels of U.S. wheat was released from Pakistan Government storage to help pay labor costs. Villagers donated the funds for building material, and their contributions were augmented by a Pakistani Government grant. The school building will accommodate 100 children from six different villages.

Construction and operation of the school is expected to provide information as a pilot project that will prove useful in expanding school construction in Pakistan and possibly other countries.

The Gangu Bahadur School serves six villages in an area about 25 miles from Rawalpindi, the capital of Pakistan, and near Taxila, which was an important seat of learning in the second century B.C.

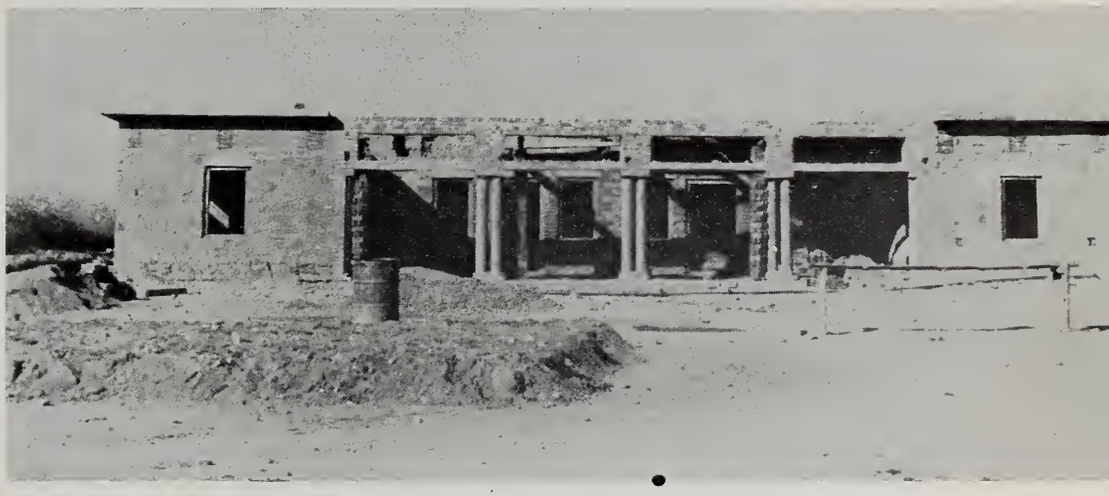
Before the new school building was constructed, classes were held in an open courtyard.

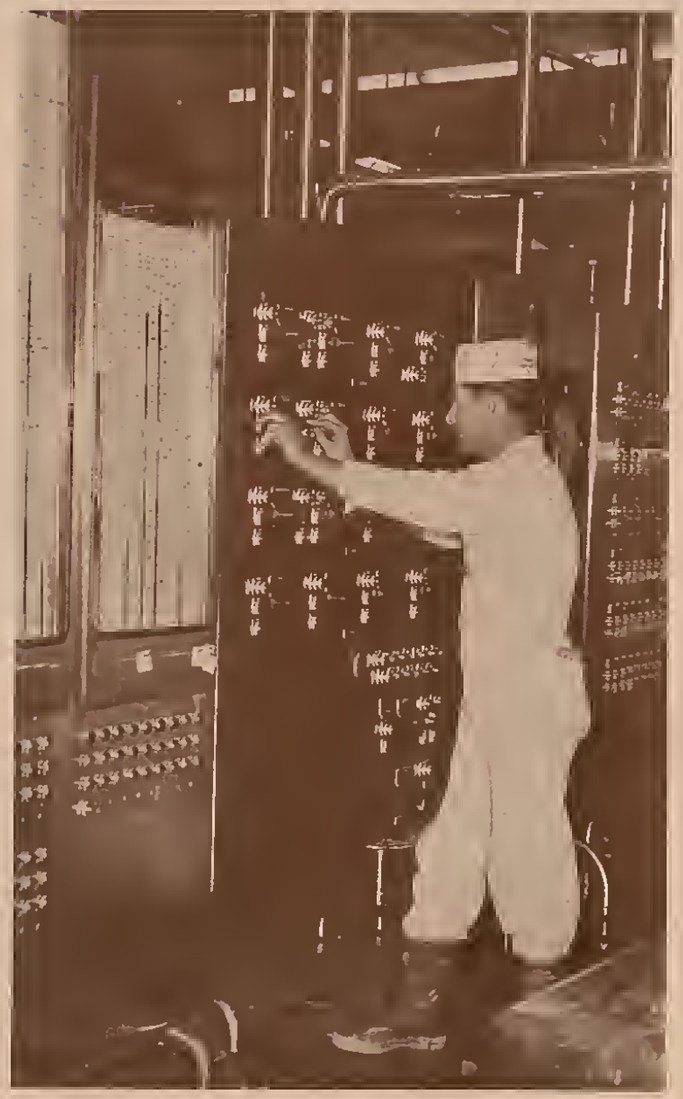
The building covers 1,960 square feet, and includes a kitchen and toilet facilities. Wheat Associates, Inc. will soon institute a school lunch program here in cooperation with the village council.

Total cost of the building was 23,500 rupees ($4,971). The local villagers provided 57 percent of this cost. U.S. wheat, 976 bushels, was given to the village council for labor costs. Total market value of the wheat was $2,114.

Wheat Associates—USA. Inc., is an organization representing U.S. wheat growers in Asia, in cooperation with the U.S. Department of Agriculture's Foreign Agricultural Service.

While dedication ceremonies were being held at the school in West Pakistan (opposite page), similar observances were being held at the USDA in Washington. Among those at the West Pakistan ceremony (above) were U.S. Consul General to West Pakistan Henry W. Spielman (3rd from left) and Agricultural Attache Perry R. Varney (4th from left). Speaking (photograph at left) is Malik Mohammed Shaffi, Chairman of the Village Council, who told Secretary of Agriculture Freeman that what the village needed most was a school. Wheat from U.S. helped pay labor costs. Villagers donated funds for building materials. School building will accommodate 100 children.





Automation for Special Milk Plants

CHARGES for marketing fluid milk now amount to around 58 percent of the retail priec, compared to a low point of 47 pereent in 1947-49.

The result: the dairyman is eoncerned over low priees, while the eonsumer is unhappy about high prices.

From the standpoint of marketing research workers in USDA's Agricultural Marketing Service, the question isn't "Who's to blame?" but rather "What ean be done about it?"

They find that automation offers one of the most promising ways to meet higher marketing costs and ever-increasing competition in the dairy industry. Operators of plants that proeess only bottled milk and half-and-half with a weekly output of 35,000 gallons, can save $26,000 a year by installing automated and highly mechanized equipment.

Savings of this scale are shown in a study made under contraet to AMS. Medium-size plants that proeess 105,000 gallons of milk and half-and-half a week could save even more—about $39,000 a year.

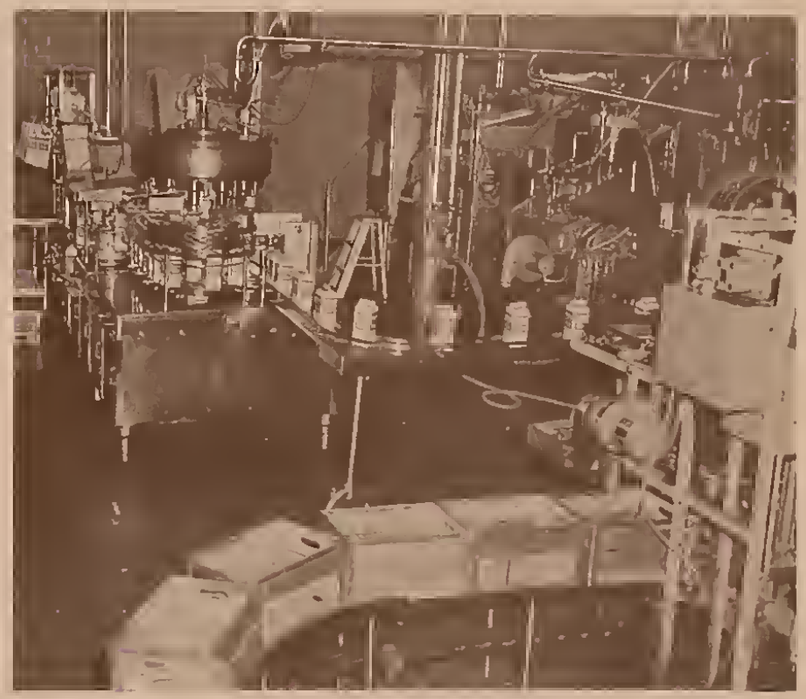
The savings result from reduced labor costs, which, in a few years, more than offset the initial expense and operating costs. Automated and highly mechanized equipment in a plant handling 35,000 gallons of milk a week would pay for itself in about 9½ years.

Essential equipment includes a central control panel, plus (1) remote-control sanitary valves, (2) load cells, (3) automatic easers, (4) automatic case staekers, (5) staek feed magazine. (6) automatic ease unstacker, (7) automatie ease dividers, and (8) automatic cleaned-in-place systems.

With such equipment the receiving of raw milk, standardizing, pasteurizing, homogenizing, and most of the necessary cleaning and sanitizing of equipment heeome almost entirely pushbutton operations.

Instead of hand-setting valves and starting and stopping individual pieees of equipment, a worker selects the correct settings and sends milk through the processing equipment by operating the eontrol panel.

Instead of hand-packing cartons of milk in eases, a worker tends an auto-



At top left is a modern shelter for receiving milk delivered in bulk tank trucks. At bottom left is a control panel for performing automated operations. In the top photograph (above) the equipmem is stacking cases five-high automatically, while below, cartons are being filled with milk automatically.

matic casing machine, and another machine that automatically stacks cases on a conveyor.

With such equipment, a dairy plant can handle the same work with fewer men than a conventional plant. If the plant normally handles 35,000 gallons weekly, manpower needs would be reduced by four men, with 134 gallons of milk processed per man-hour, as compared to about 85 per man-hour in a conventional plant.

Automated equipment would also reduce inplant losses of milk and provide more uniform quality milk than nonautomated equipment.

Calculations by marketing researchers show that automatic equipment pays for itself faster in the larger of the two plants (the plant handling 105,000 gallons of milk a week). In these larger plants it would take, instead of 9½ years, only 6½ years for an operator to pay the total cost of purchasing and operating the equipment.

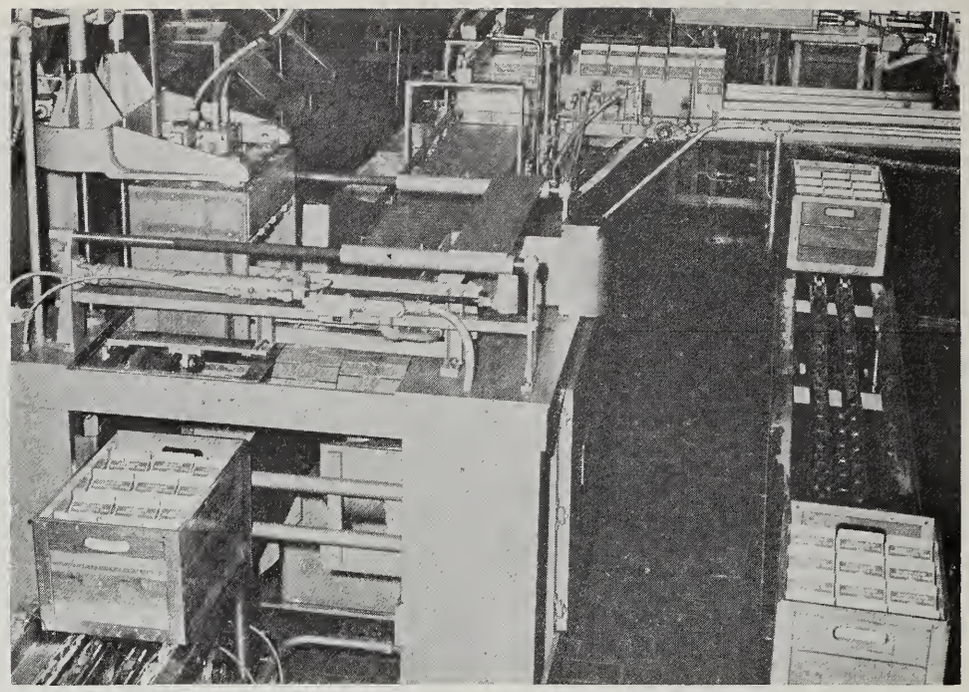
Automated equipment in this larger plant can do the work six men do in a plant with conventional equipment. Production per man-hour increased about 55 percent, with an average of 239 gallons of milk per man-hour, as compared to about 154 gallons in a nonautomated plant.

The advantages of an automated setup in the larger plant really show up during a peak production day; one, for instance, in which 22,500 gallons of milk may be handled. About 256 gallons per man-hour can be processed on such days, while a nonautomated plant is handling about 165 gallons.

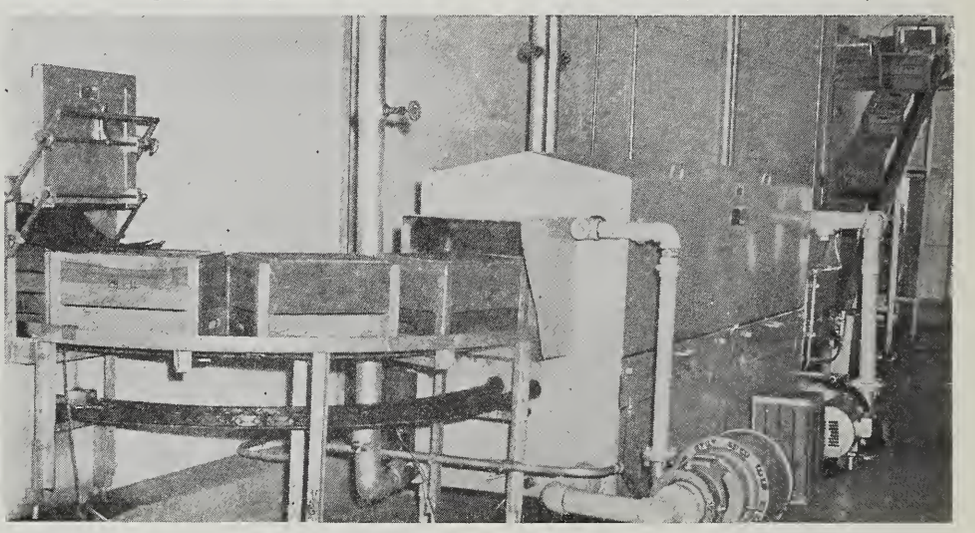
Detailed description of the equipment needed for automation of plants processing 35,000 and 105,000 gallons of milk and half-and-half a week have been prepared by marketing researchers. Overall plant operation plans also have been drawn up, along with layouts of the equipment and the entire plant.

Copies of the full report containing this information may be obtained by sending for Marketing Research Report No. 568, "Layouts and Operating Criteria for Automation of Dairy Plants Processing Milk and Half-and-Half." Single free copies are available from the Office of Information, USDA, Washington 25, D.C.

A group of additional reports will be issued in the coming months giving recommendations for modernizing general purpose plants, and those handling chocolate drink, buttermilk, cream, ice cream and ice cream novelties, cottage cheese, cream cheese, buttermilk, sour cream, cheddar cheese, dried milk, and sweet cream butter.



Automatic equipment packs milk carton in cases, above; washes cases, below.



Eggs a Basic for Better Breakfasts

DON'T overlook eggs as a food trades' suggestion for better breakfasts—they are a long-time favorite, with lots of promising potential.

Eggs always get the day off to a good start—and they're especially suited to breakfasts during the brisk winter weather.

Rating high in protein and low in calories, eggs are popular with all age groups.

Featuring eggs for breakfast serves more as a helpful reminder than as a bright-thought suggestion; the popularity of eggs for this important meal is well established. But, suggestions might profitably be made as to the wealth of ways in which eggs may be prepared—soft or hard-cooked, fried, poached, baked, scrambled, or as an omelet, and so on. And, of course, suggestions don't need to be confined to breakfast usage—eggs are equally good for any meal, lunch, dinner, snack, too.

Food tradesmen encouraging better breakfasts have a good "tie-in" potential with eggs. One of eggs' happiest attributes is their compatibility—they get along well with people, and with other foods, too. So, when you're making your suggestions for the tie-ins that lead to better breakfasts, rely on eggs.

"Cream of the Crop"

Poultry Inspectors and Graders Honored

"INSPECTED for wholesomeness by U.S. Department of Agriculture."

"USDA Grade A."

"U.S. Grade A Large."

Familiar words?

These legends— which make poultry and egg buying easier and more satisfactory—are the end result of the efforts of some 2400 poultry and egg inspectors and graders of USDA's Agricultural Marketing Service.

One-hundred sixteen of these inspectors and graders, all of whom are members of AMS's Poultry Division, were recently honored as the "cream of the crop," after the regular periodic appraisals were made of their performance by supervisory personnel.

Following their selection, the 116 employees were presented the awards—both certificates of merit and cash awards—for "sustained superior performance" in carrying out their work.

Among 116 poultry inspectors and graders employed by the USDA's Agricultural Marketing Service who were granted certificates of merit and cash awards for superior performance are Daniel H. Painter (2nd from left), who supervises inspection in 35 processing plants in a five-State area around Washington, D.C., and Donald A. Niebuhr (3rd from left), officer-in-charge of the AMS poultry and egg grading office at the New York City terminal market. At left is Hermon I. Miller, Director of the AMS Poultry Division, and right, AMS Administrator S. R. Smith.

Inspectors with the Poultry Division supervise all phases of poultry processing operations in nearly 900 plants throughout the Nation, to assure that the products of these plants are safe and wholesome. Their work is done under authority of the Poultry Products Inspection Act, the law requiring that products of poultry processing plants trading in interstate commerce be federally inspected for wholesomeness.

Poultry that is processed under supervision of Federal inspectors must be wholesome, properly labeled, not adulterated, and processed in a sanitary, "Kitchen-clean" manner. Inspectors examine each bird on the processing line to make sure that it's wholesome—in fit condition to grace the consumer's dinner table.

Graders with the Poultry Division evaluate shell eggs and poultry for quality, and assign grades according to official standards set by the Agricultural Marketing Service. They also inspect the production of processed eggs to insure that egg products are prepared from wholesome materials and under sanitary conditions.

Grading services are conducted in nearly 700 plants by the Poultry Division—usually in cooperation with the State departments of agriculture. These services, furnished to plants at their request and paid for by the requestors, are performed under authority of the Agricultural Marketing Act of 1946.

The work of the AMS inspectors and graders is a key role in the marketing of poultry and egg products—some of the Nation's most important foods.

Of all the poultry sold off the Nation's farms during fiscal year 1962, nearly 85 percent was inspected for wholesomeness by AMS inspectors.

Federal and Federal-State graders graded about 20 percent of the shell eggs, nearly one-half of the poultry crop, and more than 80 percent of the liquid and dried egg production.

Carcass Evaluation – Key To

THE average American consumes more beef than all other red meats combined. And he has been sufficiently satisfied with the palatability of the beef industry's product to increase his demand for it to an all-time high.

His rate of beef consumption has risen steadily from 78 pounds per year in 1953 to the present rate of 88 pounds per year.

Why does the average American consume beef at such a high rate? The answer lies in the beef itself. The United States produces the highest quality beef in the world. Yet, in spite of this high quality and high level of acceptance, the industry is not content to rest on its laurels. It is striving constantly to improve the quality of beef and to expand consumer demand for it.

One aspect of the overall improvement effort receiving increasing attention is a search for improved methods of evaluating beef carcasses.

In years past, market emphasis has been on highly finished (fat) cattle, because of the supposed association with high quality.

Many considered it necessary to put considerable fat onto the outside of a carcass in order to get the necessary marbling—or distribution of fat through the lean meat—to assure tender, juicy, and tasty beef.

When consumers demanded less and less excess fat on their beef, the stores started trimming it away before it reached the meat counter. But someone still had to pay for its production—the producer through lower prices per pound for the live animal, the consumer through higher prices per pound for the trimmed cuts, or the middlemen through lower profits.

Obviously, the ideal long-run goal would be to produce cattle with enough marbling to make top-quality eating, but without waste fat on the outside to be trimmed off and thrown away.

It has become clear that some strains of cattle, within most of the beef breeds, can produce well-marbled lean beef that is tender and tasty, with very little waste fat on the outside.

These cattle, which yield more edible beef, should be worth more per pound of live weight. The need is to identify the final product with the particular animal it came from; to find out more and more about what kind of breeding or feeding it takes to produce such very desirable beef cattle; and out of all this, to reward the cattlemen who succeed.

One major step toward meeting that need has been the establishment and expansion of carcass contests at many of the leading livestock shows around the country. The recent International Live Stock Exposition in Chicago drew 267 entries in the carcass contest. And there are others . . . the Annual Midwest Steer and Carcass Show at Austin, Minnesota . . . the Eastern National Livestock Exposition at Timonium, Md. . . . . the Grand National Livestock Exposition in San Francisco . . . the Pacific International at Portland, Ore. . . . the Hoosier Beef Show in Indianapolis . . . the Pennsylvania Livestock Exposition at Harrisburg . . . the Southwestern Livestock Exposition at Fort Worth. Contests are being held at many State fairs, too . . . in Florida, Arkansas, New York, and Nebraska, to name a few.

At most of these contests, the "blue ribbons" and cash awards are based primarily on appraisals of the quality of the lean, and "cutability" of the carcass, or its yield of retail cuts. Contest officials, many of them college meat specialists, are stressing the importance of recognizing carcasses that combine high quality lean with high cutability, and they are devising evaluation methods which consider both of these factors.

Officials at the Nebraska State Fair's carcass contest have developed an evaluation procedure which establishes a "carcass index"—a numerical rating system representing the dollar-value per hundredweight of carcass. This evaluation method combines both quality grade and carcass yield factors. Officials at several other shows have adopted similar evaluation techniques.

Another step aimed at making the producer more aware of market demands was taken last July when the USDA's Agricultural Marketing Service introduced a dual grading system for beef on a trial and optional basis. Dual grading assigns two separate grade identifications to a carcass—one for its quality of lean, another for its cutability or yield of salable meat.

The quality half of the dual grade is determined in the same manner as the quality part of conventional grades, and the same grade names—USDA Prime, Choice, Good, etc.—are used to identify quality. The cutability, or yield grade, is based on measures of carcass fatness and muscling. These numerical grades, ranging from 1 through 6, reflect a realistic appraisal of carcass cut-out value.

The trial period for dual grading was arranged to give industry an opportunity to try it without disrupting the conventional grading service.

Two of the leading beef cattle breed associations, the American Angus Association and the American Hereford Association, also have recognized the need for providing producers with a more accurate picture of meat-type cattle so that outstanding sires may be identified. Both organizations have developed and adopted detailed carcass evaluation procedures with particular emphasis on the amount of salable meat a carcass will produce.

The Angus Association has adopted a three-phase program called the Angus Herd Improvement Record. The carcass evaluation phase is based on grade and cutability factors. Under this program, tests animals are fed to specific weight ranges—750 to 1,000 pounds for heifers and 850 to 1,100 pounds for steers. After slaughter, cooperating packers supply producers with detailed information relating to carcass grade and cutability—the carcass weight, the USDA grade, marbling score, fat thickness over the rib eye, loin eye area, weight of the

Better Beef

trimmed wholesale round, hide weight, and kidney knob and suet weight.

The Hereford Association's evaluation procedure incorporates many similar principles. One of its unique features, however, is that all feeding of test animals is done in selected feedlots under relatively uniform conditions. Heifers are fed to weights of 800 to 950 pounds and steers to weights of 950 to 1,000 pounds. When the animals are slaughtered, the producer is supplied with a report of the hot carcass weight, the USDA grade, marbling score, rib eye area, and fat thickness over the rib eye. Rib eye tracings are furnished also. Carcass cutability is calculated and used as an additional measure of carcass excellence.

Last year, the Performance Registry International adopted similar carcass evaluation procedures.

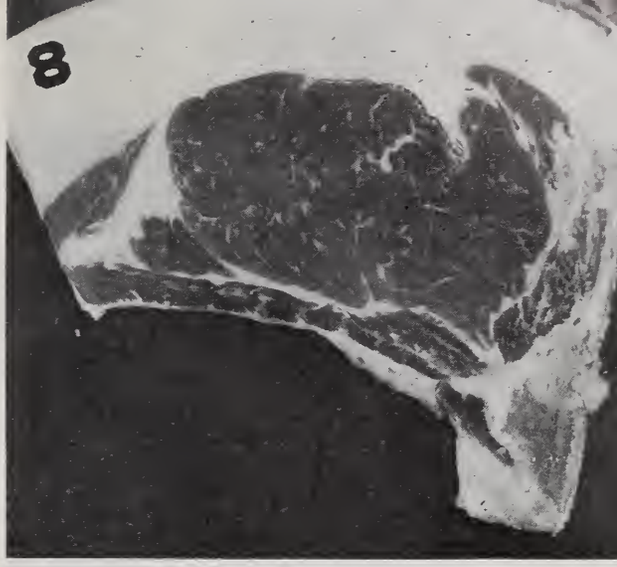
To be of maximum benefit to producers, and to the entire industry, the evaluation factors used in any of these research activities must be simply and easily applied to cattle production and marketing. The information must be easily determined, readily understood, and reasonably accurate.

Meat Grading and Standardization specialists of AMS's Livestock Division have devised a carcass data certification system which assures the producer that animal-carcass identity will be maintained until all required carcass information has been obtained. When a producer wants to secure information on certain cattle, he contacts the USDA meat grader in his area and points out those cattle. A numbered back tag, furnished by the grader, is placed on each animal. The grader then supplies the Federal meat inspector working on the packinghouse "kill floor" with correspondingly numbered seals. The inspector attaches the appropriate seal to each carcass as the cattle are dressed. This procedure maintains positive identification between the live animal and its resulting carcass.

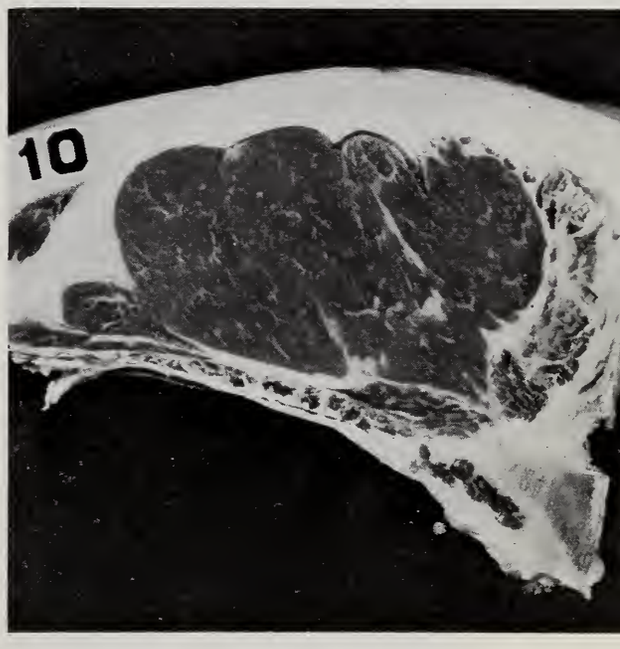
When the carcasses have been graded, producers may be supplied the following information: The USDA quality grade, with reports on marbling, color, texture, firmness, and maturity; the USDA yield grade, including reports on fat thickness over the rib eye, the area of the rib eye, the quantity of kidney and other internal fat, and the carcass weight; and the conformation grade. Rib eye tracings also are furnished when requested.

This service to producers is available at the same fee as the regular grading service ($7.20 per hour) and can be billed to cooperating packers, or USDA will bill the producer directly if he desires. Producers who wish to use this service should contact the nearest office of the Meat Grading Branch of AMS's Livestock Division.

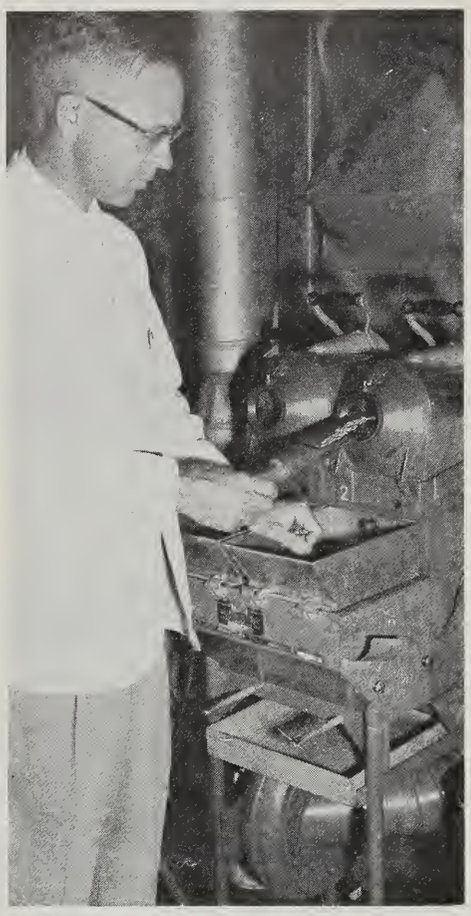
All of these activities—the carcass contests, the evaluation program adopted by the breed associations, USDA's yield grades and carcass data certification system—are just a few examples of the cooperative effort to improve and expand the market for the nation's beef supply. The continuation of this effort will lead to more and better beef on the consumer's table.



These ribs are of similar quality but the rib above has a heavy covering of waste fat which must be trimmed away. Rib below combines high quality with a minimum of excess trimmable fat.



Below, left, W. E. Tyler, chief, Standardization Branch, Livestock Division, AMS; center, Fred Doehne, past-president, Texas Independent Meat Packers Association; and, David M. Pettus, director, Livestock Division, examine an outstanding carcass during a recent dual grading demonstration at a packing plant in Dallas.



Roasting . . .

. . . and tasting

USDA Coffee Inspection

By FITZHUGH L. SOUTHERLAND

EMILY Post may frown on those who slurp their coffee, but in the U.S. Department of Agriculture coffee "slurping" is actually encouraged.

Experts in the Fruit and Vegetable Division of AMS say there's no better way to really taste coffee. And since the taste is the most important factor in rating its quality, actual sampling or "cupping" is an important part of the coffee inspection, which is a voluntary service offered by the Division on a fee basis.

Almost all of our coffee is imported as green bean coffee. When the coffee is to be inspected by USDA, the samples of the green beans are submitted to the Division's Washington office for grading and cupping.

One of the largest users of the program is the Veterans Administration, which has been having AMS inspect its coffee purchases since 1956. Today, all of the coffee supplied to the 170 VA hospitals throughout the country has been inspected and taste-tested by USDA officials.

Other users of the program include the General Services Administration, which purchases food supplies for government cafeterias and lunch rooms, and the State purchasing agents of New Jersey, Maryland, Ohio, Virginia, Louisiana, and Illinois. AMS also inspects some of the coffee purchased by the U.S. Navy, the District of Columbia, and the State of Connecticut. Several additional States have expressed an interest in the program.

Coffee inspection requires a high degree of skill and experience. The green beans have to be examined for defects. The area where the coffee was grown is important too, because coffees from different areas have characteristic flavors, some good, some not so good.

Then comes the most important part —tasting the coffee. It takes a complete knowledge of coffee and its many flavors. Two shipments of coffee may look exactly alike, but locked inside the beans are particular flavor factors that mean the difference between a rich, full-bodied cup of coffee and a harsh, bitter one.

To inspect coffee properly, the inspector must know all of the subtle meanings of the various flavors. He must be able to weigh the desirable qualities such as smoothness, full body, and acidity against those of rankness, harshness, mustiness, and so forth.

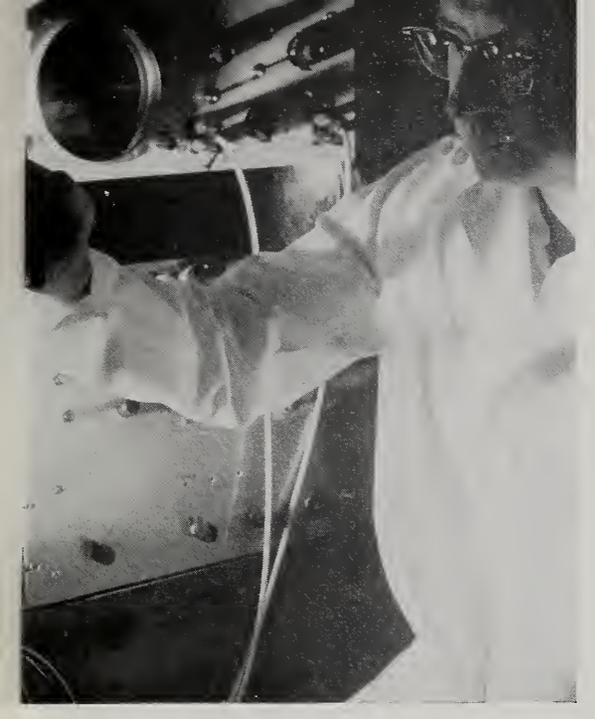
Such skill comes only from a thorough knowledge of the product itself and many years' experience in food taste-testing. Coffee inspection requires both an educated mind and an educated palate.

Two different types of coffee inspection are offered to institutional users. Under one of these plans, AMS inspectors take samples of the green coffee beans prior to roasting. These are sent to the Washington, D.C., laboratory. The beans are roasted, brewed and cupped. Then an inspection certificate is issued on the overall quality of the lot of green coffee.

Under the second plan, an AMS inspector is on hand in the plant where the roasting is done. He inspects the grade and cupping quality of the beans and, also, observes the blending, roasting, grinding, and packaging to make sure that all contract specifications are met. This is the more comprehensive plan, but it is also the more expensive. It is usually used only on lots of 25,000 pounds of coffee or more.

With either plan, however, users of the AMS coffee inspection service receive an expert appraisal of the coffee they purchase. The inspection is thorough, and the result is the considered judgment of men well qualified to discern the cupping qualities of good coffee.

(The author is chief of the Processed Products Standardization and Inspection Branch of the Fruit and Vegetable Division, AMS.



Roundup of . . .

AMS Services In 1962

FOOD marketing charges leveled off in the United States during 1962 after rising in each of the 11 preceding years, according to a year-end review issued recently by the U.S. Department of Agriculture.

Marketing charges (which cover the cost of assembling, shipping, packaging, storing, processing, and selling) are expected to average about the same in 1963.

"By strengthening and improving its marketing services, regulatory work, and marketing research, USDA's Agricultural Marketing Service seeks to help maintain a private marketing system that is efficient and as economical as possible—preserving our traditions of fair competition and free enterprise," Secretary of Agriculture Orville L. Freeman said.

Marketing costs around 62 percent of each dollar consumers spend for food—or a total during 1962 of $42 billion.

Here are some ways AMS services, research, and regulatory work helped in 1962 to make marketing more efficient and hold down the spread between prices paid by consumers and prices paid to farmers.

INSPECTIONS

AMS inspected for wholesomeness most of the Nation's poultry. Much of its food, fiber, and tobacco was marketed under Federal grade standards, including, (among others):

- Half of the beef
- One-fifth of the shell eggs
- Two-fifths of the broilers
- Seven-tenths of the turkeys
- Three-fifths of the butter
- Six-tenths of the canned fruit and vegetables
- Nine-tenths of the frozen fruits and vegetables
- Much of the fresh fruits and vegetables (no total estimate available)
- All of the grain that crossed State lines
- All of the rosin and turpentine
- Nearly all of the cotton
- All tobacco sold at auction (95 percent of the crop)

STANDARDS

AMS designed more precise, more descriptive standards for farm products to help meet the needs of today's mass merchandising system. These included:

- A proposed dual grading system for beef, which would provide separate grades for quality and for yield of trimmed retail cuts;
- A draft of proposed standards for instant nonfat dry milk;
- Revised Universal Standards for American Upland Cotton—standards which are used in world trade in cotton.

MARKET NEWS REPORTS

AMS improved market news reports to make them better and more comprehensive than they have ever been before. Improvements include:

- Coverage of more direct transactions between farmer and processor or

(*continued on page* 16)

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AMS Services in 1962

(*continued from page* 15)

wholesaler-retailer, in line with changes in marketing practices:

- More reports on auction sales and shipping point activities;
- More frequent issue of reports;
- More specialized reports.

REGULATIONS

AMS renewed emphasis on regulatory programs which protect the financial interests of farmers, as well as of marketers and consumers, and safeguard our free, competitive marketing system. Work in 1962 included:

- 240 cases under the Packers and Stockyards Act—a law which provides for protection against monopoly, practices which restrict competition, and misrepresentation of quality or weight in the marketing of livestock, meat, and poultry;
- 2,700 cases under the Perishable Agricultural Commodities Act—a law which regulates trade in fruits and vegetables through a code of good business practices;
- 1,800 public warehouses in 37 States supervised under terms of the U.S. Warehouse Act to provide assurance of safe storage of farm products;
- Extended coverage under the Federal Seed Act—a truth in labeling law—to make this service still more effective in protecting the interests of consumers, farmers, and all who deal in seeds.

MARKETING RESEARCH

AMS helped solve marketing problems and reduced marketing costs through research which:

- Devised methods of poultry processing that reduce operating costs and waste of edible meat;
- Designed new refrigerated truck trailers to provide greater protection to frozen foods;
- Formulated plans for new wholesale food marketing facilities in 25 cities where there is need to hold down food waste and high operating costs of antiquated facilities;
- Developed an "invisible" air door for helping cold storage warehouses operate more efficiently;
- Developed instruments for rapid and accurate detection of internal defects of fruits and vegetables thereby aiding in inspection and packaging;
- Demonstrated that bacterial build-up in cut-up poultry parts could be prevented by continuous spray washing of conveyor belts with chlorinated water in packing plants, thorough cleaning of meat blocks in stores and adequate hand-washing facilities in both locations;
- Resulted in better commercial packages for protecting food from insect damage and preserving its wholesomeness;
- Developed standardized lighting specifications for grading and inspection of grain and other commodities;
- Showed that fiber properties of cotton are damaged by excessive lint cleaning.

FOOD DISTRIBUTION

AMS expanded markets for farm products and helped to share our national abundance with the undernourished and underprivileged through:

- The National School Lunch Program which made it possible for 15 million children in 65,000 schools to eat nearly 2.5 billion well-balanced lunches;
- Distribution of 2 billion pounds of food, valued at $366 million to school children and needy persons in institutions and in families in all States and territories;
- Distribution of 4 million pounds of donated foods to the victims of hurricanes, floods, and other natural disasters;
- Expansion of the Special Milk Program to 87,000 schools, child-care centers, summer camps, orphanages, and the like; to provide 2.6 billion half-pints of milk for children;
- Expansion of the Pilot Food Stamp Program to 17 counties and one city in 12 States, with more than 200,000 Americans now enjoying better diets through increased food-purchasing power. Plans were announced to extend the program early in 1963. If accepted by all areas to which it was offered, this would bring the total to 45 counties and cities in 23 States.

AGREEMENTS, ORDERS

AMS helped, through adminstration of marketing orders and agreements, to improve farmers' bargaining power and at the same time through its inspection and grading programs bring consumers better quality fruits and vegetables. During 1962:

Marketing orders for fruits and vegetables hit a new high—45 orders in effect, in 27 States, covered products with a farm value of more than $1¼ billion.

MATCHING FUNDS

AMS provided aid to States under a Matching Funds Program that helped State departments of agriculture in 41 States conduct 121 marketing improvement projects.

EMERGENCY FOODS

AMS stepped up planning for the job of managing food supplies in the event of national emergency. This work included:

- Development of estimates of current national civilian food needs;
- Preparation of standby food orders and authorities for issuance at National, State, or county levels;
- Cooperation with the food industry in a two-way exchange of information, advice, and assistance on plans for processing, storing, protecting, and distributing foods;
- Plans for food stockpiling, set-asides, salvage, quality control, transportation, conservation, and radiological monitoring of poultry products and foods owned by USDA's Commodity Credit Corporation at terminal markets.